REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed June 17, 2004. Claims 3 - 6, 9, and 11 - 22 have been canceled without prejudice, waiver, or disclaimer. Claims 1, 7, 8, and 10 have been amended. Claims 23 - 32 have been added. The subject matter of amended claims 1, 7, 8, and 10 and new claims 23 - 32 is contained within FIGs. 5 - 13 and the related detailed description of the specification. Consequently, no new matter has been added to the application.

Upon entry of the amendments in this response, claims 1, 2, 7, 8, 10, and 23 - 32 remain pending. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Claim Rejections Under 35 U.S.C. 112

A. Statement of the Rejection

The Office Action indicates that claims 1, 2, 7, 8, and 10 stand rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the rejection alleges that the claims contain subject matter not described in the specification.

B. Discussion of the Rejection

Applicant has amended independent claims 1 and 7 to more clearly point out and distinctly claim the subject matter of claims 1 and 7. Specifically, claims 1 and 7 have been amended such that the modified carry-save adder does not receive the carry-out bit from the first carry-save adder. Apparatus claim 1 and method claim 7, as amended, are consistent with originally submitted FIG. 6. Thus, claims 1, 2, 7, 8, and 10 contain subject matter that was described in the specification and the rejection should be withdrawn.

II. Claim Rejections Under 35 U.S.C. 102

A. Statement of the Rejection

The Office Action indicates that claims 1, 2, 7, 8, and 10 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Bradley (U.S. Patent No. 6,496,846), hereafter *Bradley*.

B. Discussion of the Rejection

Applicant's independent claims 1 and 7, as amended, contain features that are not disclosed, taught, or suggested in *Bradley*. Accordingly, claims 1 and 7 are not anticipated by *Bradley*. Because independent claims 1 and 7 are not anticipated, dependent claims 2, 8, 10, and new claims 23 - 32, which depend directly or indirectly from independent claims 1 and 7 are also not anticipated by *Bradley*.

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior-art reference disclose each element, feature, or step of the claim. See *e.g.*, *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988). *Bradley* fails to disclose, teach, or suggest each element and/or method step in the claims.

1. Claims 1 and 2

Turning now to the specific claim rejections, claim 1 is exemplary. For convenience of analysis, independent claim 1, as amended, is repeated below in its entirety.

> 1. An apparatus for performing the addition of propagate, kill, and generate recoded numbers, said apparatus comprising:
>
> a circuitry configured to receive at least a first operand, a second operand, and a carry-in bit, the first and second operands comprising respective first and second propagate, kill, and generate recoded number representations of respective first and second binary operands;
>
> a first carry-save adder configured to add said first operand and said second operand to generate a third propagate, kill, and generate recoded number representation and a carry-out bit; and
>
> a modified carry-save adder configured to receive the third propagate, kill, and generate recoded number representation from the first carry-save adder and the carry-in bit from the circuitry, add the separate propagate, kill, and generate bits of the third propagate, kill, and generate recoded number representation with the carry-in bit to generate a sum value and a carry value, ***wherein the circuitry provides the carry-out bit from the first carry-save adder at a first output and the carry value from the modified carry-save adder at a second output.***

(Applicant's independent Claim 1 - *Emphasis added.*)

Applicant respectfully asserts that *Bradley* fails to disclose, teach, or suggest a circuitry that "***provides the carry-out bit from the first carry-save adder at a first output and the carry value from the modified carry-save adder at a second output***." The circuit illustrated in FIG. 1 of *Bradley* encodes the carry-in as well as the operand bits in a binary addition of two streams of bits. The first eight bits of operands A and B are processed by encoder 105 and summer 106. The next five bits of operands A and B are processed by encoder 103 and summer 104. A carry-out bit from encoder 105 is forwarded to summer 104. The carry-out bit is not provided at an output of the circuitry. Summer 106 generates and forwards the sum of the first eight bits of operands A and B. Summer 104 generates and forwards the sum of the next five bits of operands A and B. Summer 104 and Summer 106 generate no other outputs. Consequently, *Bradley* does not disclose, teach, or suggest circuitry that "provides the carry-out bit from the first carry-save adder at a first output and the carry value from the modified carry-save adder at a second output. Thus, *Bradley* fails to anticipate amended claim 1. Accordingly, the rejection of claim 1 should be withdrawn.

Because independent claim 1 is allowable, dependent claim 2, which depends directly from claim 1, is also allowable. *See In re Fine,* 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, Applicant respectfully requests that the rejection of claims 1 and 2 be withdrawn.

2. Claims 7, 8, and 10

Claim 7 is also exemplary. For convenience of analysis, independent claim 7, as amended, is repeated below in its entirety.

> 7. A method for processing propagate, kill, and generate representations of respective first and second binary operands, comprising:
>
> receiving a carry-in value and a first and a second propagate, kill, and generate representation of respective first and second binary operands;
>
> generating a third propagate, kill, and generate representation and a carry-out value responsive to the first and second propagate, kill, and generate representations;
>
> ***logically combining the third propagate, kill, and generate representation with the carry-in value to generate a sum value and a carry value***; and

> ***providing the carry-out value, the carry value, and the sum value as a result of the addition of the first and second propagate, kill, and generate representations.***

(Applicant's independent Claim 7 - *Emphasis added.*)

Bradley fails to disclose, teach, or ***suggest "logically combining the third propagate, kill, and generate representation with the carry-in value to generate a sum value and a carry value"*** as recited in Applicant's claim 7.

None of the functional elements of *Bradley* alone or in combination performs this function. Encoder 105 receives a carry-in and the first eight bits of operands A and B. Encoder 105 generates CINH and CINL, which are carry-out values with respect to the encoding of the first eight bits of operands A and B and carry-in values with respect to summer 104. Encoder 105 produces propagate, kill, and generate encoded numbers. Encoder 105 does not produce a sum value. Producing propagate, kill, and generate encoded numbers at outputs 106-1, 107-1, 108-1, and 109-1, CINH, and CINL responsive to operands A and B and carry-in values CINH and CINL does not disclose, teach, or suggest the combination of a third propagate, kill, and generate representation with a carry-in value to generate a sum value and a carry value as encoder 105 produces the first and second propagate, kill, and generate representations and carry-out values CINH and CINL. Thus, encoder 105 does not perform this function for at least the reasons that it does not receive a propagate, kill, generate representation and it does not produce a sum value.

Encoder 103 produces propagate, kill, and generate encoded numbers responsive to the next five bits of operands A and B and carry-in values CINH and CINL. Encoder 103 does not produce a sum value. Encoder 103 does not produce a carry value. Thus, encoder 103 does not perform this first emphasized function.

Summer 106 receives first and second propagate, kill, and generate encoded numbers and carry-in values CINH and CINL and generates a sum value (SUMH, SUML). Summer 106 does not produce a carry value. Thus, summer 106 does not perform this first emphasized function.

Summer 104 receives first and second propagate, kill, and generate encoded numbers and carry-in values CINH and CINL and generates a sum value (SUMH, SUML). Summer 104 does not produce a carry value. Thus, summer 104 does not perform this first emphasized function.

Furthermore, the combination of encoder 105 encoder 103, summer 106, and summer 104 does not disclose, teach, or suggest "***logically combining the third propagate, kill, and generate representation with the carry-in value to generate a sum value and a carry value***" as recited in Applicant's claim 7. In this regard, the circuit illustrated in FIG. 1 of *Bradley* receives operands A and B and carry-in values CINH and CINL, encodes the operands to produce first and second propagate, kill, and generate encoded representations of the operands along with a carry-out value, and generates a sum responsive to the first and second propagate, kill, and generate encoded representations of the operands and the carry-out value from the encoding.

Thus, *Bradley* does not disclose, teach, or suggest the logical combination of a third propagate, kill, and generate representation with a carry-in value to generate a sum value and a carry value. Consequently, *Bradley* fails to disclose, teach, or suggest at least this limitation of Applicant's claim 7. For at least this reason, *Bradley* fails to anticipate claim 7. Thus, claim 7 is allowable and the rejection should be withdrawn.

Moreover, *Bradley* fails to disclose, teach, or suggest "***providing the carry-out value, the carry value, and the sum value as the result of the addition of the first and second propagate, kill, and generate representations***." As shown above, summer 106 and summer 104 generate and provide respective portions of the sum of first and second propagate, kill, generate encoded operands. *Bradley* does not provide a carry-out value and a carry value. For at least this separate and independent reason, *Bradley* does not anticipate Applicant's claim 7.

Because independent claim 7 is allowable, as shown above, dependent claims 8 and 10 are also allowable. *See In re Fine, supra*. Accordingly, Applicant respectfully requests that the rejection of claims 7, 8, and 10 be withdrawn.

III. New Claims

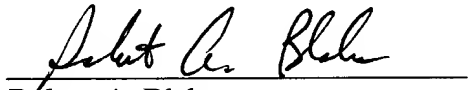
New claims 23 - 32 depend directly or indirectly from allowable independent claims 1 and 7. Accordingly, new claims 23 - 32 are allowable.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all rejections have been overcome and that pending claims 1, 2, 7, 8, 10, and 23 - 32 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby requested. If the Examiner believes that a telephone conference would expedite the prosecution of the application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

THOMAS, KAYDEN, HORSTEMEYER & RISLEY, L.L.P.

By: 

Robert A. Blaha
Registration No. 43,502

THOMAS, KAYDEN,
HORSTEMEYER & RISLEY, L.L.P.
Suite 1750
100 Galleria Parkway N.W.
Atlanta, Georgia 30339
(770) 933-9500